

What is claimed is:

1. An audio apparatus for use in negative drive of a loudspeaker having an internal impedance to perform a desired amplitude-frequency characteristic, comprising:

an amplifier device that drives the loudspeaker with a driving voltage;

a feedback device that performs a positive feedback of a signal corresponding to the driving voltage of the loudspeaker to the amplifier device with a variable feedback gain, thereby causing the amplifier device to generate a negative impedance effective to negate the internal impedance of the loudspeaker; and

an adjustment device that decreases the variable feedback gain of the feedback device as a level of the driving voltage of the loudspeaker increases, thereby adjusting the amplitude-frequency characteristic of the amplifier device.

2. The audio apparatus according to claim 1, wherein the adjustment device comprises a detector that detects the signal corresponding to the driving voltage in terms of a load voltage of the loudspeaker, and a converter that converts the detected load voltage to a control voltage, and wherein the feedback device comprises a voltage-controlled amplifier connected between the converter and the amplifier device, and having the variable feedback gain responsive to the

control voltage from the converter to perform the positive feedback to the amplifier device.

3. The audio apparatus according to claim 1, wherein the adjustment device decreases the variable feedback gain of the feedback device only if the level of the driving voltage exceeds a critical level, and otherwise keeps the variable feedback gain constant as long as the level of the driving voltage remains under the critical level.

4. The audio apparatus according to claim 1, wherein the adjustment device decreases the variable feedback gain of the feedback device as the level of the driving voltage increases so as to suppress the amplitude-frequency characteristic of the amplifier device, thereby preventing an output of the amplifier device from clipping.